

PLANTS COLLECTED ON THE SANDWICH ISLANDS BY GEORGE BARCLAY
HAWAIIAN PLANT STUDIES 89

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George Barclay was born at Huntley, Aberdeenshire, Scotland, but the date is unknown. He was trained as a gardener, and was employed in the Royal Gardens, Kew. On the recommendation of Robert Brown, he was appointed botanical collector for the voyage of H.M.S Sulphur, under Capt. F. N. Beechey who was soon replaced by Capt. Sir Edward Belcher.

On this world voyage, they visited the Hawaiian Islands three times. On July 9, 1837 they arrived at Honolulu, then on the 26th left for Kauai. They returned to Honolulu on June 10th, 1839, and on the 16th they departed from Kauai. In 1840 they briefly touched at the islands.

Evidently Barclay's days on shore were few, but he made good collections, totalling some 90 species of plants from Oahu and Kauai. His labels state the month, and the year, and often the habitat, the stature, and the color of the flowers. These details were seldom recorded by botanists of his time.

His plant specimens are preserved in the herbarium of the British Museum of Natural History in London. He did not publish anything on botany. There is a book on the botany of the voyage of the Sulphur, by George Bentham (1844-1846), but it includes only the plants collected in Fiji.

ENUMERATION
PTERIDOPHYTA

Lycopodiaceae

Lycopodium cernuum L. 1235, Woahu (=Oahu), mountains, rich loam, July 1837. 1339; Atooi (=Kauai), hills, rich mould, July 1837.

Psilotaceae

Psilotum nudum (L.) Griseb. 1234, Woahu, moist vegetable soil, July 1837.

Ophioglossaceae

Ophioglossum falcatum (Presl) Fowler, 1233, Woahu, on trees & rocks, decayed vegetable soil, July 1837; Sandwich Islands, without other data.

Grammitaceae

Amphoradenium tamariscinum (Kaulf.) Copel. Woahu, without other data.

Polypodiaceae

Polypodium Thunbergianum C. Chr. Woahu, on vegetable soil and rocks, July 1837.

Pteridaceae

Pteridium aquilinum (L.) Kuhn, var. *decompositum* (Gaud.) Tryon, 1225, Woahu, shady habitat, rich loam soil, July 1837.

Vittariaceae

Vittaria rigida Kaulf. 1232, Woahu, moist habitat, rich loam soil, July 1837.

Dennstaedtiaceae

Microlepia setosa (Sm.) Alston, 1228, Woahu, moist habitat, rich loam soil, July, 1837.

Lindsaeaceae

Sphenomeris chinensis (L.) Maxon, 1229, Woahu, wet ravines, rich loam soil, July 1837.

Thelypteridaceae

Christella cyatheoides (Kaulf.) Holttum, 1226, Woahu, wet ravines, rich loam soil, July 1837.

C. glabra (Brack.) Ktze. 1220, Woahu, wet ravines, rich loam soil, July 1837.

C. nuda Underw. Woahu, no other data.

Aspleniaceae

Asplenium acuminatum H. & A. 1218, Woahu, moist and shady habitat, July 1837.

A. enatum Brack. 1223, Woahu, upon trees, in thicket upon the mountains, July 1837.

A. horridum Kaulf. without data.

A. nidus L. 1230, Woahu, moist habitat, rich loam soil, July 1837.

Athyriaceae

Athyrium Macraei (Hook. & Grev.) Copel. 1221, Woahu, thickets on mountains, rich loam soil, July 1837.

Nephrolepidaceae

Nephrolepis exaltata (L.) Schott, 1227, Woahu, wet ravine, rich loam soil, July 1870.

Blechnaceae

Doodia Kunthiana Gaud. Sandwich Is., without other data.

PHANEROGAMAE

MONOCOTYLEDONES

Gramineae

Chrysopogon aciculatus (Retz.) Trin. 1216, Woahu, mountains, gravelly soil, July 1837.

Cyperaceae

Carex wahuensis C. A. Mey. 1215, Woahu, mountains, gravelly soil, July 1837; 1323, Atooi, marshes, loam soil, July 1837.

Gahnia Beecheyi Mann, Atooi, without other data.

G. globosa Mann, 1206, Woahu, elevated habitat, common soil, July 1837.

Scirpus paludosus A. Nels. 1205, Woahu, moist habitation, common soil, July 1837.

Liliaceae

Dianella sandwicensis H. & A. 1241, Woahu, shady ravines, rich loam soil, July 1837; Atooi, used for dying

logwood colour.

Smilax sandwicensis Kunth, "Aka awa," used for tying the rafters of houses together. Atooi.

Dioscoreaceae

Dioscorea bulbifera L. 1305, Woahu, Honolulu, hillside, common, July 1837. It is called "hoy" by the natives who dry the tubers and use them as arrow root and upon the whole it make no despicable substitute.

DICOTYLEDONES

Piperaceae

Peperomia tetraphylla (Forst. f.) H. & A., var. *parvifolia* (C. DC.) Deg. & Deg. Atooi, 1837.

Piper methysticum Forst. f. 1312, Woahu, rich mould soil, cultivated, July 1837, "awa."

Urticaceae

Pipturus albidus (H. & A.) Gray, Oahu, 1837.

P. Helleri Skottsb., Atooi, 1837.

Loranthaceae

Korthalsella complanata (V. Tiegh.) Engler, 1274, Woahu, growing upon *Acacia* no. 1273, July 1837.

K. Remyana v. Tiegh. Atooi, "lama," The fruit is eaten, and the wood is used for buildings. -These data seem confused.

Santalaceae

Santalum ellipticum Gaud. 1289, Woahu, hills, rich soil, July 1837.

Chenopodiaceae

Chenopodium oahuense (Meyen) Aellen, Woahu, meadows, rich mould soil, July 1837.

Amaranthaceae

Amaranthus viridis L. Woahu, open field, loam soil, July 1837.

Charpentiera ovata Gaud. "pa pala," fruit used for making necklaces.

Lauraceae

Cassytha filiformis L. Woahu, parasite, abundant, July 1837; 1332, Atooi, hills, parasite, July, 1837.

Capparaceae

Cleome sandwicensis Gray, Woahu, hills, July 1837.

Cruciferae

Lepidium o-waihiense C. & S. Woahu, mountains, July 1837.

Rosaceae

Osteomeles anthyllidifolia (Sm.) Lindl. 1287, Woahu, abundant on the hills near Honolulu, July 1837.

Leguminosae

Acacia Koa Gray, Woahu, mountains, July 1837.

Canavalia galeata (Gaud.) Vogel, Woahu, hillsides, light brown soil, July 1837.

Cassia Gaudichaudii H. & A. 1284, Woahu, hills, rich loam soil, 20 ft. tree, July 1837.

Leucaena leucocephala (Lam.) de Wit, Woahu, hills, rich

mould soil, 20 ft. trees, July 1837.

Tephrosia purpurea (L.) Pers. Woahu, hills, loam soil, July 1837.

Oxalidaceae

Oxalis corniculata L. 1300, Woahu, meadows, rich soil, July 1837.

Zygophyllaceae

Tribulus cistoides L. 1243. Woahu, open fields, July 1837.

Euphorbiaceae

Aleurites moluccana (L.) Willd. 1261, Woahu, loam soil, July 1837. There is an oil extracted from the fruit which is called "Kuk Kui oil" and has of late become an article of export from the Sandwich Islands. Several mills have been recently erected at Woahu for bruizing the nuts.

Euphorbia Arnottiana Endl. Atooi, July 26, 1837.

E. hirta L. 1286. Woahu, meadows near Honolulu, common, July 1837.

Phyllanthus sandwicensis Muell.-Arg. 1276, Woahu, high land, rich loam soil, July 1837.

Celastraceae

Perrottetia sandwicensis Gray, Woahu, various habitats, rich loam soil, July 1837.

Sapindaceae

Dodonaea sandwicensis Sherff, Atooi, 1837.

Malvaceae

Hibiscus tiliaceus L. Atooi, 1837.

H. Youngianus Gaud ex H. & A. 1242, Woahu, various habitats, July 1837.

Sida fallax Walp.

Sterculiaceae

Waltheria indica L. 1245, Woahu, various habitats; and second sheet, open fields, July 1837.

Flacourtiaceae

Xylosma hawaiiense Seem. isotype, "Rouk kui," Woahu, wet ravines, July 1837.

Thymeleaceae

Wikstroemia Degeneri Skottsbs., 1259, "Kaulé," Woahu, mountains, loam soil, July 1837.

W. oahuensis (Gray) Rock, 1317, Atooi, hilly habitat, rich mould soil, July 1837.

Myrtaceae

Metrosideros polymorpha Gaud., var. *glaberrima* (Lévl.) St. John, 1252, Woahu, hills, rich loam soil, July 1837; 1316, Atooi, moist and sheltered habitat, rich loam soil, July 1837.

M. polymorpha Gaud., subsp. *incana* (Lévl.) Skottsbs., 1251, Woahu, hills, rich loam soil, July 1837.

Onagraceae

Ludwigia octivalvis (Jacq.) Raven, Atooi, July 1837.

Epacridaceae

Styphelia Tameiameiae (Cham.) F. Muell., Atooi.

Apocynaceae

Alyxia olivaeformis Gaud. Atooi, "Maile," used for beads, July 1837.

Rauvolfia sandwicensis A. DC. Atooi, July 1837.

Convolvulaceae

Ipomoea brasiliensis (L.) Sweet, Atooi, marshy habitat, rich soil, flowers rose coloured, July 1837.

I. congesta R. Br., 1340, Atooi, meadows, soil rich mould, July 1837.

I. congesta R. Br., albino, 1333, Atooi, lowland, soil rich, July 1837.

Boraginaceae

Cordia subcordata Lam. Woahu, soil clayey, 20 ft. tree, July 1837.

Verbenaceae

Verbena litoralis HBK. Woahu, July 1837.

Labiatae

Phyllostegia glabra (Gaud.) Benth., var. *Macraei* (Benth. in A. DC.) Sherff, Atooi, July 1837.

Solanaceae

Solanum aculeatissimum Jacq. Woahu, meadows, common, July 1837.

S. kauaiense Hbd., Atooi, July 1837.

Gesneriaceae

Cyrtandra paludosa Gaud., var. *paludosa*, Woahu, mountains, July 1837, three sheets.

C. Garnotiana Gaud., Woahu, July 1837.

Rubiaceae

Bobea elatior Gaud. Atooi, hills, soil rich, July 1837.

B. Hookeri Hbd. Woahu, high land, rich loam soil, July 1837.

Gouldia terminalis (H. & A.) Hbd., forma *terminalis*, Woahu, hills, rich mould soil, July 1837.

Hedyotis Schlechtendahlia Steud., var. *Schlechtendahlia*. 1253, mountains, soil loam, July 1837.

Morinda citrifolia L. Woahu, July 1837; Atooi, July 1837.

Psychotria Fauriei (Lévl.) Fosb. Woahu, mountains, soil loam, July 1837.

Lobeliaceae

Cyanea Grimesiana Gaud. Woahu, hills, rich mould soil, flowers white, July 1837.

Rollandia parvifolia Forbes, Atooi, July 1837.

(Lobeliaceae) Atooi, stem, leaves, and buds of *Clermontia*; loose flowers of *Rollandia*.

Goodeniaceae

Scaevola Gaudichaudiana Cham. Woahu, mountains, soil rich loam, flowers white, July 1837.

- Scaevola Taccada (Gaertn.) Roxb., var. Fauriei (Lévl.)
 St. John, Atooi, hills, soil rich mould, shrub 1 foot
 high, flower white, July 1837.
- S. Taccada (Gaertn.) Roxb., var. sericea (Vahl) St. John,
 1326, Atooi, hills, loam soil, July 1837.

Compositae

- Aster sandwicensis (Gray) Hieron. Woahu, July 1837.
- Bidens sp. Atooi, July 1837. Stem, leaves. Perhaps a
 form of B. sandwicensis Less., det E. E. Sherff.
- Erigeron canadensis L. Atooi, July 1837.
- Lipochaeta succulenta (H. & A.) DC., var. Barclayi Sherff,
 cited by Sherff in 1933, type.

DISCUSSION

Barclay's collection of Hawaiian plants, as now found in the British Museum of Natural History, includes 90 species. Of these 41 have the collector's numbers, these ranging from 1,205 to 1,340, that is a run of 125 numbers. This shows that 84 numbers are missing. These specimens may still be in the London museum, though the writer doubts it, or may have been lost, or all or some of them may be in another herbarium.

By 1837 Honolulu was a well developed trading port. Through the advent of boats, people, animals, and merchandise, there was transport for exotic weeds. Barclay's collection contained weed species of Chrysopogon, Amaranthus, Leucaena, Oxalis, Euphorbia, Waltheria, Ludwigia, Verbena, Solanum, and Erigeron, a total of 10 species, several of which were recorded as common.

BIBLIOGRAPHY

- Bentham, George, 1844-1846. The botany of the voyage of H.M.S. Sulphur 1-195, London.